

REMARKS

Claims 1-11 have been examined in the present application. Claims 1-9 have been rejected under 35 U.S.C. § 103(a) over Yamada (U.S. Pat. No. 6,008,440) in view European Patent (EP 0711655 A2, hereinafter "EP 655"). Claims 10 and 11 have been rejected under 35 U.S.C. § 103(a) over Yamada alone. The abstract of the disclosure was objected to. The abstract and claims 1, 5 and 10 have been amended hereby. Claims 12 and 13 have been added. Reconsideration of the present application is respectfully requested in light of the above amendments and below remarks.

Support for the amendment of claims 1, 5 and 10 can be found on page 4, lines 22-26 of the specification.

Claims 1-9 have been rejected under 35 U.S.C. § 103(a) over Yamada and EP 655. Applicants respectfully traverse this rejection.

Independent method claims 1 and 5 have been amended hereby to affirmatively state that the "fiber directions of the wooden plate units are **uniformly** aligned." (Emphasis added). In rejecting the alignment limitation of independent claims, 1 and 5 the Office Action has stated that EP 655 teaches this limitation. Applicants respectfully disagree. As best understood, the "veins" disclosed in EP 655 mean the narrow strips of a different color in wood, which is typically referred to as the "wood grain." Applicants respectfully submit that the alignment of the fiber directions of the wooden plate units as recited in independent claims 1 and 5 is different from aligning the veins in parallel. The fiber direction of the wooden plate units is in the direction of the vessels in the wood. The directions of the veins (wood grain) is not necessarily parallel to the vessels. Even when the wooden plate units are stacked with the grain in parallel, the fiber direction of the wooden plates are not necessarily aligned uniformly. Therefore, EP 655 does not disclose the limitation of "uniformly" aligning the fiber directions of the wooden plate units as recited in independent claims 1 and 5. Withdrawal of the rejection of independent claims 1 and 5 and their dependent claims 2-4 and 7-9 is therefore respectfully requested.

As discussed in the specification, a goal of the present invention is to provide wood elements for musical instruments that have the qualities of natural wood. Specifically, inventors

have invented a process that creates a laminate wood that has a density and ratio of E_L (the modulus of elasticity in the fiber direction)/ G_{TL} (the modulus of rigidity in the tangential direction) closer to natural woods than heretofore known in the prior art. Materials in which both the density and the E_L/G_{TL} values close to those of natural woods, such as granadilla, show very similar vibration characteristics (see the present specification at page 3, lines 17 to 24). However, prior to the present invention, it was extremely difficult to adjust the two values of density and the E_L/G_{TL} to values suitable for a musical instrument because there is no relationship between the values of the E_L/G_{TL} ratio and the density. Further it is difficult to adjust the value of the E_L/G_{TL} ratio (see the present specification at page 3, lines 25 et seq.).

The present inventors have been able to accomplish this task by aligning the fiber directions of the wooden plate units during the lamination process and by controlling the thermal pressing process in order to make the density of the laminated body be in the range of the 0.8 to 1.4 g/cm³. None of the prior art of record discloses either of these features.

In paragraph 6 of the Final Office Action, the Examiner states that “[a]pplicants, it appears, are solely arguing the claimed density of the laminated body. The Examiner respectfully reminds applicants that the claimed invention is mostly directed to manipulative limitations – see claims 1-7.”

During an interview on February 13, 2006, the Examiner clarified the above-mentioned statement to mean that the Applicants cannot solely rely on the density of the laminated body to distinguish Applicants’ claimed method from the prior art. This is because, as argued by the Examiner, the claim density relates to the apparatus produced by the method, not the method itself. Applicants respectfully disagree that the Examiner’s reasoning applies to claims 3 and 8, directed to wood elements generated by the claimed method, and claims 4 and 9 directed to a musical instrument manufactured using these wood elements. These claims are structure claims and claimed the density is a positive structural limitation of these apparatus claims.

Applicants respectfully submit that the particular density of the laminated body is not disclosed in the cited prior art. Therefore, even if, for the sake of argument, the method is found

by the Examiner to be anticipated by the prior art, the wood elements having a density in the range from 0.8 to 1.4 g/cm³ is not anticipated by the cited prior art.

For at least this reason, Applicants respectfully request the withdrawal of rejections of claims 3 and 8, directed to wood elements generated by the claimed method, and claims 4 and 9 directed to a musical instrument manufactured using these wood elements.

The Examiner also states in paragraph 6 of the Final Office Action that “the reference teaches related densities whether same densities relate to cellular portions of the laminate or not is not readily ascertained from the references’ obvious combined teachings.”

As argued in Applicants’ response to the previous Office Action, the description in Yamada is directed to the density of particular cellular layers 10F/G/H/J such as acrylic foam urethane foam and rubber foam (Yamada column 4, lines 53-54), not to the claimed “laminated body” as distinctly claimed.

Applicants respectfully submit that the density of a particular cellular layer that is combined with multiple viscoelastic layers to form the laminated structure, as disclosed by Yamada (see Yamada Fig. 4), does not render obvious the density of the ‘laminated body’ as a whole, as claimed by Applicants. Yamada does not teach or suggest the density of the laminated body being “0.8 to 1.4 g/cm³,” as distinctly claimed.

For at least this other reason, Applicants respectfully request the withdrawal of rejections of claims 3 and 8, directed to wood elements generated by the claimed method, and claims 4 and 9 directed to a musical instrument manufactured using these wood elements.

Claims 2-4, 6-9 and 11 are directly or indirectly dependent on independent claims 1, 5 and 10. Therefore, all of the above arguments involving claims 1, 5 and 10 are equally applicable to dependent claims 2-4, 6-9 and 11. Withdrawal of the rejection of claims 2-4, 6-9 and 11 on the basis of Yamada in view of EP ‘665 is therefore respectfully requested.

Claims 10 and 11 have been rejected under 35 U.S.C. § 103(a) over Yamada in view of one of ordinary skill in the art at the time the invention was made. Applicants respectfully traverse this rejection.

As argued above, Yamada does not disclose a laminated body with "a density of 0.8 to 1.4 g/cm³," as explicitly recited in claim 10. Applicants respectfully submit that the addition of the knowledge of one of ordinary skill in the art at the time of the invention does not cure Yamada's deficiency in disclosing the density limitation in claim 10. Therefore, withdrawal of the rejection of independent claim 10 on the basis of Yamada in view of the knowledge of one of ordinary skill in the art is respectfully requested.

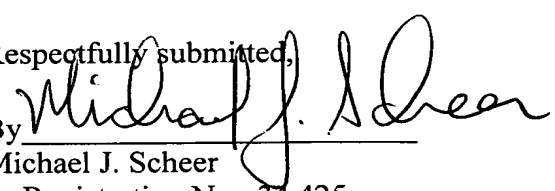
Claim 11 is dependent on and include all of the limitations of base claim 10. Therefore, all of the above arguments regarding independent claim 10 apply equally to dependent claims 11. Therefore, withdrawal of the rejection of independent claim 11 on the basis of Yamada in view of one of ordinary skill in the art is respectfully requested.

Claims 12 and 13 have been added to more fully claim the present invention. Claims 12 and 13 are supported by the present specification.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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Respectfully submitted,

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